

Surface Testing for Coronavirus in Healthcare Settings

This cheat sheet intends to give some direction on COVID-19 Surface Swab Sampling at your healthcare facility. Evidence has shown that SARS-CoV-2 can remain viable in various surfaces from hours to days. In our current environment, people may become ill if they touch a COVID-19 contaminated surface and then touch their eyes, nose, or mouth. To control spread of disease, facilities need to disinfect commonly touched surfaces frequently.

One way to validate the success of the surface disinfection is to perform a surface swab analysis. Sampling sites are based on current understanding of high-touch surfaces including but not limited to doorknobs, light switches, keyboards, faucet and shower handles, hand soap dispensers, table and counter surfaces, and elevator buttons. Ensuring proper disinfection of these surfaces will lead to decreased COVID-19 transmission routes.

Objectives

Testing may be done for one or more of the following objectives:

1. To identify environmental surfaces which may play a role in onwards transmission of COVID-19
2. To validate disinfection protocol of high-touch and therefore environmental surfaces with the greatest ability to spread disease

The number and location of samples taken will be based on the specific goals of each facility. For guidance in choosing sample sites and number of samples to take, we provide some information from Centers for Disease Control and Prevention (CDC).

One helpful reference for choosing sample sites is from CDC Options for Evaluating Environmental Cleaning <https://www.cdc.gov/hai/toolkits/evaluating-environmental-cleaning.html> : "...transmission of many healthcare acquired pathogens (HAPs) is related to contamination of near-patient surfaces and equipment, all hospitals are encouraged to develop programs to optimize the thoroughness of high touch surface cleaning as part of terminal room cleaning at the time of discharge or transfer of patients." Specific guidance is further found here, <https://www.cdc.gov/hai/pdfs/toolkits/Environ-Cleaning-Eval-Toolkit12-2-2010.pdf>: "Previous experience suggests that conducting a baseline evaluation of all available surfaces (listed in the checklist) in a 10-15% sample of representative patient rooms is reasonable in a hospital with ≥ 150 beds. When hospitals have achieved a thoroughness of cleaning rate of $>80\%$, the number of surfaces to be monitored can be decreased to those available in a 5% sample of rooms per evaluation cycle unless there is a deterioration in practice. In hospitals with less than 150 beds, all available surfaces (listed in the checklist) in a minimum of 15 rooms may be monitored for baseline and ongoing evaluation."

Recommended Sampling Sites - Healthcare

Important sampling sites		Secondary sampling sites	
Patient bedroom	Doorknob, bed rails, bedside table, bedside chair, floor (<1meter from the occupant, 2m, 3m)	Patient bedroom	Bedding, telephone, chair, curtain, clothes, light switch, hand hygiene materials, garbage bin, cup
Patient bathroom	Doorknob, faucet handles, sink, toilet/bed pan	Patient bathroom	Light switch, guard rails, hand soap dispenser, wall
		Other COVID-19 Possible Transmission Areas	Doorknobs other than bedroom and bathroom, light switch, computer keyboard and mouse, elevator buttons, countertops, desk, table, chair, wall, couch, tv remote, coffee maker and cup, cabinet handles, other surfaces that are touched often

Adapted from World Health Organization document, [Surface sampling of coronavirus disease \(COVID-19\): A practical “how to” protocol for health care and public health professionals](#)

Analysis

The Molecular Testing (PCR) analysis detects the genetic signature (RNA) of the SARS-CoV-2 virus in swab samples from contaminated environmental surfaces using clinical instrumentation using RT-PCR for specific detection of **SARS-CoV-2 (COVID-19)**. RT-PCR, a molecular diagnostic test detects and quantifies the viral RNA using real time (RT) reverse transcription polymerase chain reaction (PCR). Positive results indicate the presence of the viral genetic material SARS- CoV-2 nucleic material but does not rule out the presence of other viral and bacterial contamination. **The results are reported as detect or non-detect per sample provided.**

Test Codes

Item Code	Item Description
TEST-PCR4-COVID	PCR testing for SARS-CoV2 (COVID-19) 4 Day TAT
TEST-PCR3-COVID	PCR testing for SARS-CoV2 (COVID-19) 3 Day TAT
TEST-PCR2-COVID	PCR testing for SARS-CoV2 (COVID-19) 2 Day TAT
TEST-PCR1-COVID	PCR testing for SARS-CoV2 (COVID-19) 1 Day TAT

Turnaround Times (TAT) reflect business days Monday-Friday from day project was received at the lab.

Testing Supplies:

Item Code	Item Description
ACC-SWAB-VTS	Viral Transport Systems (VTS) Swabs with 2 Sterile Polyester Tipped Swabs (1 Standard and 1 Mini Tip, Plastic/Wire Handles, 100 mm Breakpoint, Individually Wrapped), EACH

Shipping:

Shipping costs will vary based on weight and location.

Samples need to be shipped overnight and can ONLY be received at the laboratory, Monday through Friday.

COVID-19 Swab Surface Sampling Protocol

1. Refrigerate the swabs at 2-8°C upon receiving.
2. Use appropriate PPE (personnel protective equipment) before sampling the locations.
3. Wet the swab with VTS media. Sample appropriate area by moving the swab in at least 2 different directions while rotating the swab stick. Discard the smaller metal swab if received with regular synthetic swab.
4. Immediately after sampling, place the swab in the viral transport media provided and break off the swab at the scoring mark. Discard the broken swab handle.
5. Tightly close the viral transporter swab tube with swab inside.
6. Wipe the outside of viral transporter system (VTS) with alcohol wipe. Label the tube to match the corresponding sampling location.
7. Place all the VTS in a clean zip lock bag provided and seal tightly.
 - Wipe down the zip lock bag with alcohol wipe.
8. Place the sealed zip lock bag inside of another clean zip lock bag and seal.
 - Wipe down the zip lock bag with alcohol wipe.
9. **Place the biohazard label PROVIDED on the zip lock bag.**
10. Place the sealed zip lock bag with VTS swab and ice pack in the orange cooler.
11. Place the closed orange cooler with ice pack in the box provided.
 - Place the ice packs inside a separate zip lock bag before placing in the orange cooler.
 - Do not place the ice pack outside the orange cooler.
12. Place the completed chain of custody and the **signed sampling protocol** inside a separate zip lock bag in the box along with the orange cooler.
13. Tape and seal the box making sure it's sealed properly. Any damaged OR leaking boxes will be rejected and not processed.
14. Overnight the samples to the lab.